



**mobiclip™**  
multimedia for mobile phones

## *User Manual*

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# Frequently Asked Questions

## What is Mobiclip?

Mobiclip is the multimedia solution for mobile phones. It allows distributing high-quality videos, music and Flash animations, even to low-end handsets.

Simply convert your source files (AVI, MP3, SWF ...) to MO files and send them to your friends or customers.

## What is the MO Format?

The MO format is the optimized Mobiclip format. MO files contain your videos, music or Flash animations. The MO format allows running your multimedia content at high-speed on all handsets.

## What is the Mobiclip Player?

To play MO files, the Mobiclip Player must be installed on your mobile phone.

Some phones come with the Mobiclip Player already installed. For some others, you need to install it yourself.

Some phones are not yet supported, so you will not be able to play MO files on them.

## What phones are supported?

- **All Series 60 phones** (Symbian 6.1 & 7.0s): Nokia 7650, 6600, 3650, 3600, 3620, 3660, N-GAGE, Siemens SX1, Samsung SGH-D700, Sendo X
- **All Windows Mobile phones** (SmartPhone 2002 & 2003): Orange SPV, SPV E100, Dopod 515, MiTAC Mio8380, Samsung i-600, Motorola MPx200
- **All UIQ phones** (Symbian 7.0): Sony Ericsson P800, P900, BenQ P30, Motorola A920

## What is the Mobiclip Converter?

The Mobiclip Converter turns your multimedia files into MO files. It runs on a PC under Microsoft Windows.

## What is the Mobiclip Simulator?

The Mobiclip Simulators allows playing MO files in a virtual mobile phone on your PC. This helps tuning and producing great Mobiclip contents.

## Why is Mobiclip so different?

To achieve such high-quality & high-speed multimedia display, Mobiclip uses several revolutionary technologies. Please ask us for more information and comparative data.

# Mobiclip Tutorial

## Install the Mobiclip Player on your phone

### Get the installation package

Go to the **Mobiclip\Player** folder and open the file **Mobiclip-Player-Install.html**. Locate the installation file corresponding to your phone.

### Series 60 phones

- 1- Transfer the installation file from your PC to your mobile phone:
  - a. Start your Bluetooth or Infrared connection
  - b. Send the .sis file to your device
  - c. On your phone, go to **Messages > Inbox**
  - d. Open the .sis file to install it
- 2- On your mobile phone, go to **Menu > Mobiclip** and open the Mobiclip Player. It will initially display an empty list of available clips.

### Windows Mobile phones

- 1- Transfer the installation file from a PC to your mobile phone:
  - a. Start the **ActiveSync** application and select **File/Explorer**
  - b. Copy the .cab file to the “**My Smartphone**” folder
  - c. On your phone, go to **Programs > Internet Explorer** and select **Menu > Go to URL**
  - d. In the text box, enter <file:///Mobiclip-sp2002.cab> and select **Go**. Your device may need to be application-unlocked to allow the installation.
- 2- On your mobile phone, go to **Programs > Mobiclip** and open the Mobiclip Player. It will initially display an empty list of available clips.

### UIQ phones

- 1- Transfer the installation file from a PC to your mobile phone:
  - a. Connect your phone on its base
  - b. Double-click on the .sis file to start the **EPOC install wizard**
- 2- On your mobile phone, go to **Unfiled > Mobiclip** and open the Mobiclip Player. It will initially display an empty list of available clips.

## Transfer a sample MO file to your phone and play it

Go to the **Mobiclip/MoFiles** folder and locate the file **Mobiclip.mo**

### Series 60 phones

- 1- Transfer Mobiclip.mo to your mobile phone:
  - a. Push Mobiclip.mo to your device using Bluetooth or Infrared
  - b. On your phone, open Mobiclip.mo which appears in **Messages > Inbox**
  - c. Press the **Back** key on your phone to quit playing the clip
  - d. When asked “**Save this clip?**”, select **Yes**
- 2- On your mobile phone, go to **Menu > Mobiclip** and open the Mobiclip Player

- 3- In the list of available clips, select Mobiclip.mo and open it

### Windows Mobile phones

- 1- Transfer Mobiclip.mo to your mobile phone:
  - a. Start the **ActiveSync** application and select **File/Explorer**
  - b. Copy Mobiclip.mo to the folder “**My Smartphone\Storage Card\My documents\Mobiclip**”
- 2- On your mobile phone, go to **Programs > Mobiclip** and open the Mobiclip Player
- 3- In the list of available clips, select Mobiclip.mo and open it

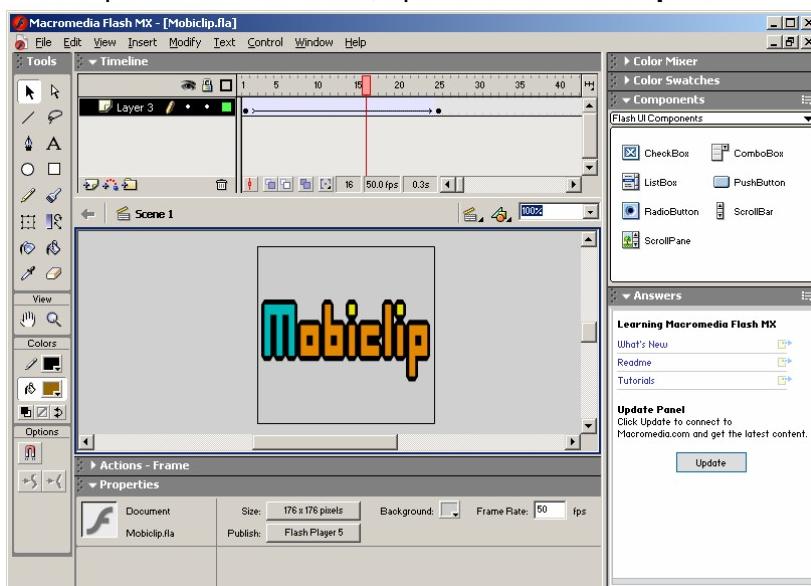
### UIQ phones

- 1- Transfer Mobiclip.mo to your mobile phone:
  - a. Connect your phone on its base
  - b. Copy Mobiclip.mo to the folder “**My phone\Memory Stick\document\Mobiclip**”
- 2- On your mobile phone, go to **Unfiled > Mobiclip** and open the Mobiclip Player
- 3- In the list of available clips, select Mobiclip.mo and open it

## Produce a MO File from a Flash File

### Create the SWF file

- 1- Run your Flash Authoring tool
- 2- In the Mobiclip\TutorialFiles folder, open the file **Mobiclip.fla**



- 3- In the menu bar, select **File/Publish**. This generates the file **Mobiclip.swf**.

### Create the MO file

- 4- Go to the Mobiclip\TutorialFiles folder, and locate the file **Mobiclip.swf**
- 5- Right click on **Mobiclip.swf** and choose “**Convert to Mobiclip (.mo)**”



- 6- When the conversion is finished, the following message box pops up. Click OK.



- 7- Look in the Mobiclip\TutorialFiles folder: the file **Mobiclip.mo** has been generated

#### Simulate the MO file

- 8- Double-click on Mobiclip.mo. This launches the **Mobiclip simulator**:



- 9- From the **Device** menu, select the **Nokia N-Gage** skin



### Produce a MO File from an Audio File

- 1- Go to the Mobiclip\TutorialFiles folder, and locate the file **EarthRevolution.mp3**
- 2- Right click on **EarthRevolution.mp3** and choose “Convert to Mobiclip (.mo)”
- 3- When the conversion is finished, click OK in the message box

- 4- Look in the Mobiclip\TutorialFiles folder: the file **EarthRevolution.mo** has been generated
- 5- Double-click on **EarthRevolution.mo** to simulate it



You can do the same with .wav and .wma files.

## Produce a MO File from a video File

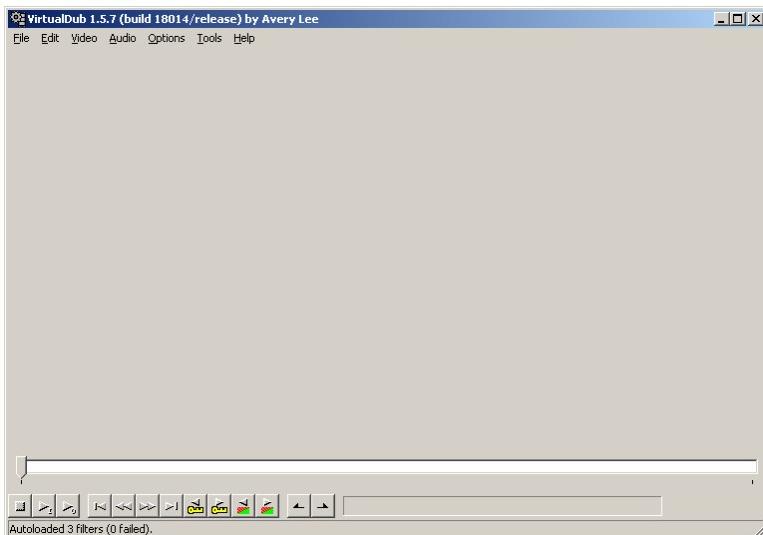
Converting a video file into a MO file requires 2 steps:

- Converting the source video into an intermediate AVI file, compressed with the Mobiclip Video Codec
- Converting the intermediate AVI file into a MO file

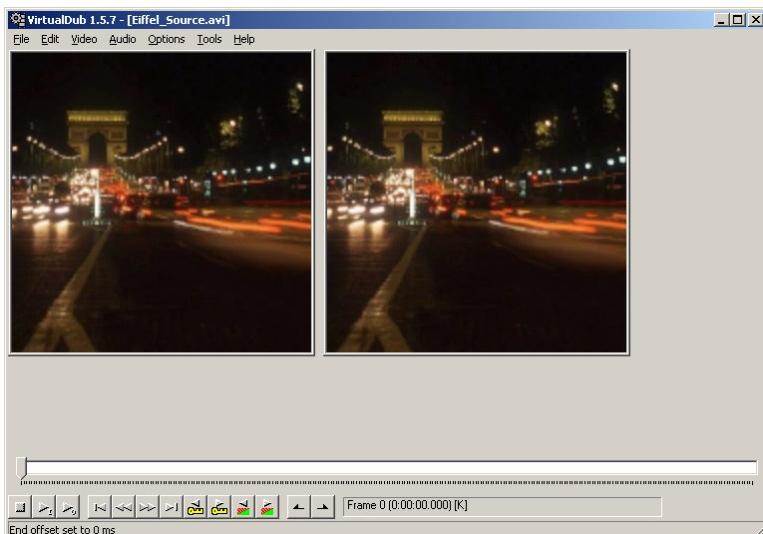
For the first step, you need a video editing software tool (Adobe Premiere, ULead Media Studio...). In our tutorial, we will use the free and famous VirtualDub. Please download it on [www.virtualdub.org](http://www.virtualdub.org).

## Create the intermediate AVI file: first step

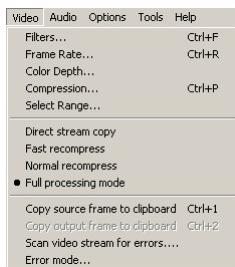
- 1- Launch VirtualDub



- 2- In the menu bar, select **File/Open video file...**, go to the Mobiclip\TutorialFiles folder and open the file **Eiffel\_Source.avi**

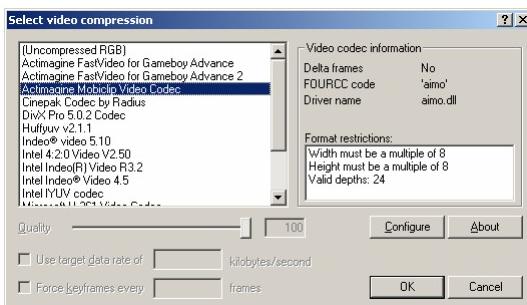


- 3- In the **Video** menu, ensure that the submenu **Full processing mode** is selected



### Create the intermediate AVI file: video compression settings

- 4- In the menu bar, select **Video/Compression...** Highlight the **Actimagine Mobiclip Video Codec**



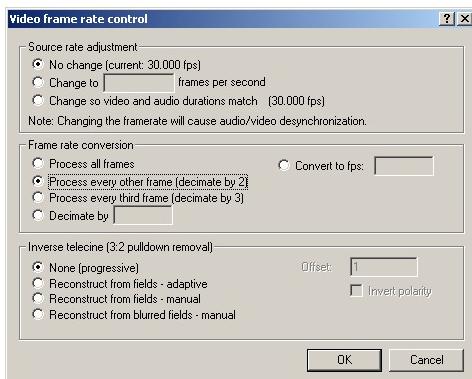
- 5- Click on the **Configure** button, and, for example, change the image quality from 75% to 70%



- 6- Click OK twice to return to the main window

### Create the intermediate AVI file: video frame rate settings

- 7- In the menu bar, select **Video/Frame Rate...** Check the radio button **Process every other frame (decimate by 2)**. This will convert the frame rate from 30 fps to 15 fps.



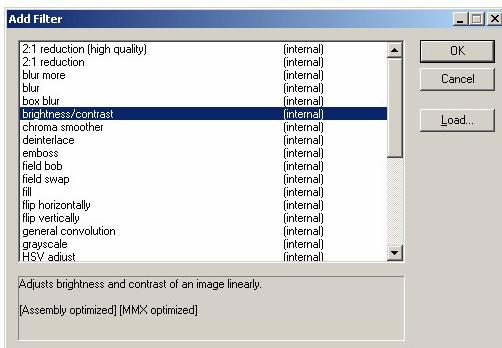
- 8- Click OK to return to the main window

### Create the intermediate AVI file: video filters settings

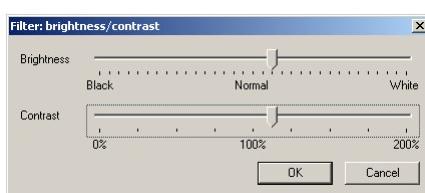
- 9- In the menu bar, select **Video/Filters...**



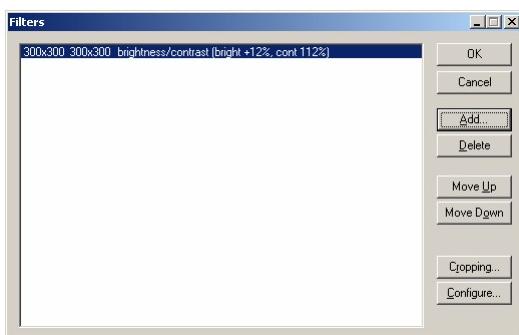
10- Click the **Add...** button, select the **brightness/contrast** filter and click **OK**



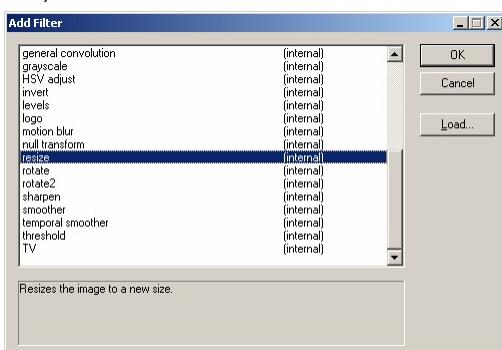
11- Increase slightly the **Brightness** and **Contrast** and click **OK** to return to the Filters window



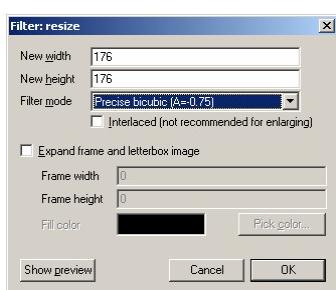
12- The Filters window should now look like this:



13- Click the **Add...** button, select the **resize** filter and click **OK**



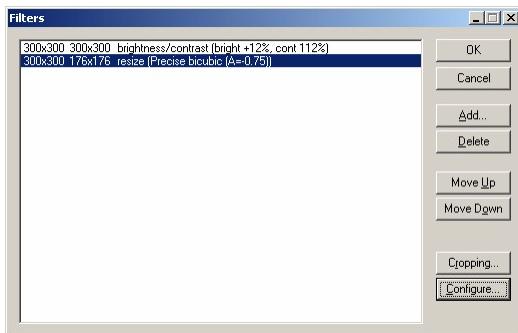
14- Set **New width** to 176, **New height** to 176, and **Filter mode** to *Precise bicubic*. Then click **OK**.



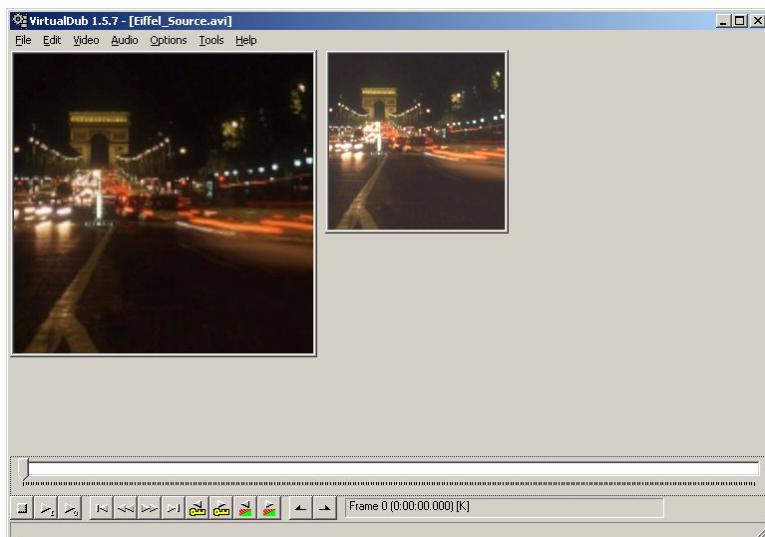
Why 176x176? Because we want our movie to be as large as possible on a Nokia 3650 (176x208 screen). Since the original movie size is 300x300 (aspect ratio = 1), this leads to a final resolution of 176x176.

Notice also that 176 is a multiple of 8 and is less than 240 (see the Video Guidelines).

15- The Filters window should now look like this:

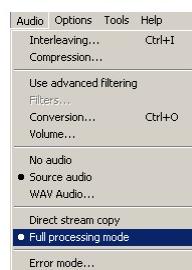


16- Click OK to return to the main window

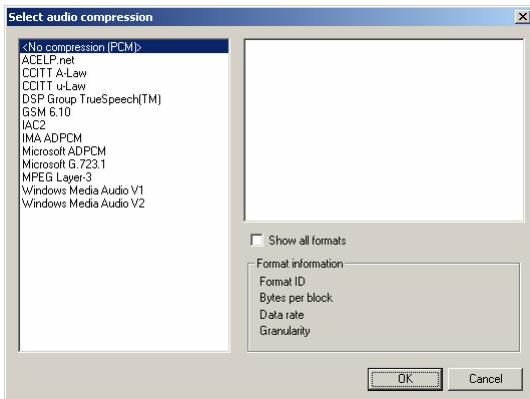


Create the intermediate AVI file: audio settings

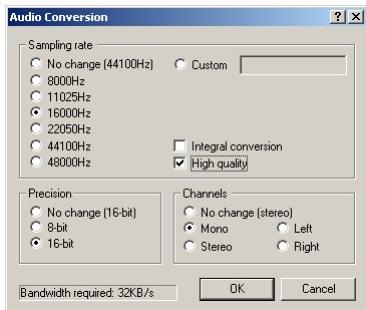
17- Go to the **Audio** menu and check the submenu **Full processing mode**



18- In the menu bar, select **Audio/Compression...** Ensure that **No Compression (PCM)** is selected then click OK.



19- In the menu bar, select **Audio/Conversion...** Select **16000 Hz, High quality, 16 bits, Mono**, then click OK.



#### Create the intermediate AVI file: final step

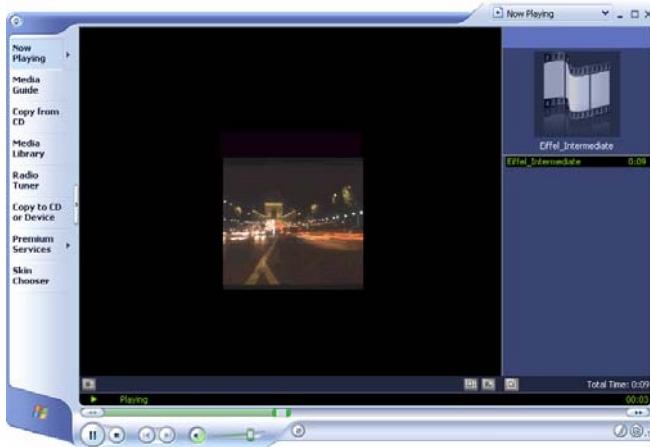
20- In the menu bar, select **File/Save as AVI...** Go to the Mobiclip\TutorialFiles folder, and save your intermediate file as **Eiffel\_Intermediate.avi**



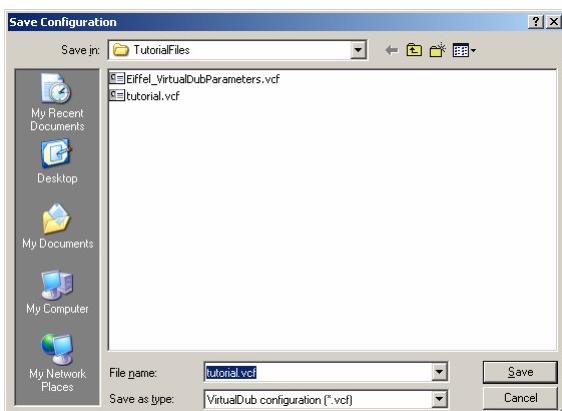
21- While the file is saved, a dialog box shows the processing status:



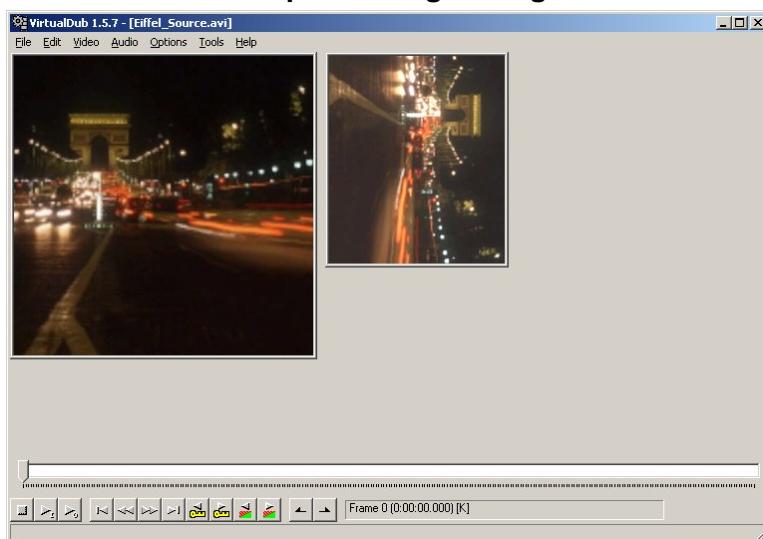
- 22- When the processing is finished, in your explorer window, go to the Mobiclip\TutorialFiles folder: the file **Eiffel\_Intermediate.avi** has been generated.
- 23- Double click on **Eiffel\_Intermediate.avi** to watch it with your Windows viewer (usually Windows Media Player):



- 24- In the menu **File/Save processing settings...**, you can save your video and audio settings for later use. For example, save your settings under the name **tutorial.vcf**.



Notice the file **Eiffel\_VirtualDubParameters.vcf**. It contains some more settings to generate a video in landscape mode (176x208). Later after completing this tutorial, use the menu **File/Load processing settings...** and see how it is made.



## 25- Quit VirtualDub

### Create the MO file

- 26- In your explorer window, go to the Mobiclip\TutorialFiles folder and locate the file **Eiffel\_Intermediate.avi**
- 27- Right click on **Eiffel\_Intermediate.avi** and choose “Convert to Mobiclip (.mo)”
- 28- When the conversion is finished, click OK in the message box
- 29- Look in the Mobiclip\TutorialFiles folder: the file **Eiffel\_Intermediate.mo** has been generated
- 30- Double-click on **Eiffel\_Intermediate.mo** to simulate it



# Mobiclip Reference

## Mobiclip Player installation files

See the file **Mobiclip\Player\Mobiclip-Player-Install.html** for a list of installation files.

## Flash Guidelines

### Graphical and Audio Limitations

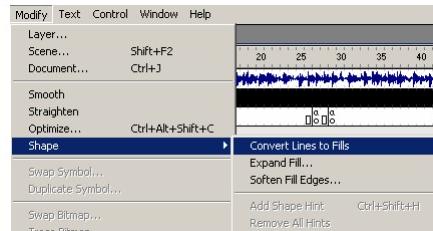
Some Flash features are not supported by Mobiclip. In order to get proper results, please follow the following rules:

- 1- Do not use **alpha effects, gradient fills, or mask layers**
- 2- Do not use bitmaps as background images (bitmaps are drawn on top of everything, with no scaling or rotation)
- 3- Use **1 audio stream only** and no audio events

### Publishing Checklist

Before publishing your SWF file:

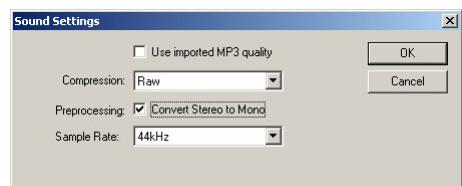
- 1- In the Modify/Shape menu, **do a "Convert lines to fills"** on all tracks (lines are not drawn by Mobiclip)



- 2- Open the **Library** (F11 key) and, for all bitmaps, open the **Properties** dialog and **uncheck "Use imported JPEG data"**



- 3- In the menu **File/Publish Settings**, set the Audio Stream format to **Raw, Mono, 44 KHz**



- 4- Frame rate must be **at least 4 fps**
- 5- Frame rate must be reasonable: a very high frame rate with complex graphics sometimes causes audio scratches



## Advice for Great Movies on Small Screens

- 1- Set a document size matching the phone screen aspect ratio
- 2- Make your button states very readable
- 3- Be aware that colours will be adjusted to the 4096 shades of the phone

## Script Limitations

- 1- All math is done in fixed point (24:8), so beware of over/under-flows. Numbers which can be represented range from -8 million to +8 million with a precision of 1/256 (roughly 0.004)

- 2- The *prototype* and *with* keywords are not supported

- 3- The following objects and methods are supported:

<code>getTimer()</code>	<code>MovieClip._parent</code>
<code>parseInt( expression )</code>	<code>MovieClip._totalframes</code>
<code>Array.length</code>	<code>MovieClip._visible</code>
<code>Array.pop()</code>	<code>MovieClip._x</code>
<code>Array.push( value )</code>	<code>MovieClip._yscale</code>
<code>Array.sort( orderfunc )</code>	<code>MovieClip._y</code>
<code>Array.splice( start, deleteCount )</code>	<code>MovieClip._yscale</code>
<code>Array.splice( start, end )</code>	<code>MovieClip.attachMovie( idName, newname, depth )</code>
<code>Array.toString()</code>	<code>MovieClip.duplicateMovieClip( newname, depth )</code>
<code>Color.setRGB( 0xRRGGBB )</code>	<code>MovieClip.getBytesLoaded()</code>
<code>Color.setTransform( colorTransfo rmObject )</code>	<code>MovieClip.getBytesTotal()</code>
<code>Key.DOWN</code>	<code>MovieClip.globalToLocal( point )</code>
<code>Key.ENTER</code>	<code>MovieClip.gotoAndPlay( frame )</code>
<code>Key.LEFT</code>	<code>MovieClip.gotoAndStop( frame )</code>
<code>Key.RIGHT</code>	<code>MovieClip.localToGlobal( point )</code>
<code>Key.UP</code>	<code>MovieClip.nextFrame()</code>
<code>Key.getCode()</code>	<code>MovieClip.play()</code>
<code>Key.isDown( keycode )</code>	<code>MovieClip.removeMovieClip()</code>
<code>Math.abs( x )</code>	<code>MovieClip.stop()</code>
<code>Math.floor( x )</code>	<code>Object()</code>
<code>Math.random()</code>	<code>String.charAt( index )</code>
<code>Math.round( x )</code>	<code>String.fromCharCode( c )</code>
<code>Math.sqrt( x )</code>	<code>String.indexOf( value )</code>
<code>Mobiclip.Dump( movieclip )</code>	<code>String.slice( start, end )</code>
<code>MovieClip._currentframe</code>	<code>String.split( delimiter )</code>
<code>MovieClip._framesloaded</code>	<code>String.substr( start, end )</code>
<code>MovieClip._name</code>	

- 4- The following methods return an undefined value for x!=0:

<code>Math.acos( x )</code>	<code>Math.sin( x )</code>
<code>Math.cos( x )</code>	

- 5- The following methods have no effect (or always return false):

<code>MovieClip.hitTest()</code>	<code>Sound.attachSound()</code>
<code>Math.atan2( x )</code>	<code>Sound.setVolume()</code>
<code>Mouse.hide()</code>	<code>Sound.start()</code>
<code>Mouse.show()</code>	<code>Sound.stop()</code>

- 6- All other objects and methods are not supported, and thus will lead to an error in the Mobiclip Simulator

## Video Guidelines

### Source Video

The quality of the source video is essential to the final result:

- 1- Use only the best video source quality
- 2- Avoid compressed formats like MPEG, QuickTime or compressed AVI
- 3- Prefer **uncompressed AVI files**, or use a **lossless compression format**, like Huffyuv (<http://neuron2.net/www.math.berkeley.edu/benrg/huffyuv.html>)
- 4- Resolution should be kept as high as possible (for example 640x480). **Delay downsizing** for the target screen to the last step

### Video Processing

- 1- Use a filter to **enhance the brightness and colours** of your movie. Mobile phone screens are usually dark.
- 2- **Reduce the frame rate** to lower the final file size:
  - 6 to 10 fps can be used to produce very small files
  - 12 fps is sufficient for animation movies
  - 15 fps is generally a good balance
  - 24 fps should be used only for fast moving videos or when the best quality is required
- 3- Avoid black bars around the video: **crop the movie** to fit exactly the image.

### Final Steps

For the final compression step:

- 1- **Use the Mobiclip Video Codec.** Only AVI files compressed with this codec can then be converted into MO files
- 2- Resize the video to fit the screen of your target phones. When resizing, remember that:
  - **Final image width must be multiple of 8 and at most 240**
  - **Final image height must be multiple of 8**
  - Try to keep the original aspect ratio of the video
- 3- **The audio track is mandatory** and must be in **uncompressed, 16000 Hz, 16 bits, mono**

## Audio Guidelines

### Source Audio

- 1- Use only the best audio source quality
- 2- Avoid compressed formats like MP3 or WMA
- 3- Prefer uncompressed WAV files, in 16 bits 44 KHz stereo

### Optional Audio Processing

If you got the time and tools, it is best to apply the following process before converting to the MO format:

- 1- Use a Normalization filter to push the sound at its maximum (100%)
- 2- Use a Compression filter if your music has significant volume variations
- 3- Boost the bass. Mobile phones usually have poor bass.
- 4- Convert to 16000 Hz, 16 bits, mono. If you don't, the Mobiclip Converter will do it anyway, but your tool may be more accurate